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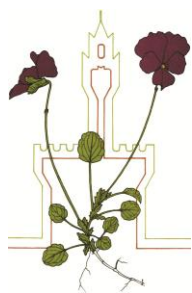
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FROM NATURE TO TECHNOLOGICAL EXPLOITATIONS

Florence, 2 - 5 September 2014

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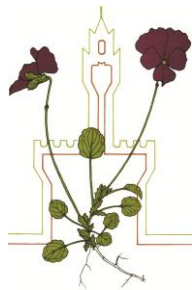
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4.4 = SYSTEMATIC INVESTIGATIONS CONCERNING *SAXIFRAGA GRANULATA* S.L. IN THE TUSCAN ARCHIPELAGO (NORTHERN TYRRHENIAN SEA): EVIDENCES FOR DESCRIBING NEW TAXA IN CAPRAIA AND MONTECRISTO ISLANDS

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The genus *Saxifraga* L. (*Saxifragaceae*) has a holarctic distribution and counts more than 440 species, including about 120 living in Europe (1). Seven species with four additional subspecies are currently reported within the Series *Saxifraga* (2). Multi-year floristic and systematic research both in the wild in the Tuscan Archipelago (Central Italy) and in herbaria allowed to investigate some interesting populations of *Saxifraga* living in Capraia, Elba and Montecristo islands and known since the end of the nineteenth century. The territory covered by the three populations is located on the border between the distribution areas of *S. granulata* L. and *S. corsica* (Ser.) Gren. & Godr. Over the years the taxonomic treatment concerning these populations has undergone various interpretations, sometimes considering them as belonging to *S. granulata* group and sometimes as belonging to *S. corsica* group. The Capraia population was formally taken into account by Sommier (3), who described a new infra-specific taxon with the name *S. granulata* var. *brevicaulis* Sommier.

The three populations were analyzed both from the morphological and caryological points of view. Morphological investigation was carried out both on living cultivated plants and on dried specimens (exsiccata) stored in several herbaria (FI, FIAF, GDOR, GE, PIAGR, PI). Morphologically the three populations can be assigned to two distinct groups: the Elba population presents the typical features of *Saxifraga granulata* s.s., whereas the populations of Capraia and Montecristo certainly belong to the group of *S. granulata* s.l. (including *S. corsica*); however they show numerous peculiar characteristics that make it difficult to identify them within *S. granulata* s.s. or *S. corsica* s.s. (plant height less than 20 cm, corymbiform inflorescence, style-stigma complex shorter than the calyx, stigma flattened and elongated rather than rounded).

Cytological studies in the genus *Saxifraga* present many practical difficulties (4), further complicated by an extremely marked intraspecific aneuploidy, leading to different chromosome numbers within populations taxonomically considered as individual species (5). The ongoing caryological investigation showed low chromosome counts for the Elba and Montecristo populations and higher counts for the Capraia population. These results and other morphometric evidences as well highlight the differences between the populations of Capraia and Montecristo.

The affinity of the Elba population with *S. granulata* s.s., widely distributed in the Italian peninsula, can be well explained by the geographic contacts between the Elba Island and the mainland till the last glacial period. Similarly, the isolation of Capraia and Montecristo, dating back to the Upper Messinian, may have allowed the differentiation and stabilization of individuals distinguishable from the original pool.

In conclusion, based on the results of the present study, and on the geographical and ecological isolation, we propose to assign the populations of Capraia and Montecristo to two new taxa, that will be described in shortly, separated either from *S. granulata* s.s. or *S. corsica* s.s.

1) D.A. Webb (1993) *Saxifraga* L.. In: Tutin T.G., Burges N.A., Chater. A.O., Edmondson J.R., Heywood V.H., Moore D.M., Valentine D.H., Walters S.M., Webb D.A. (eds), 1993 - *Flora Europaea*. 2nd edition. Volume 1. Cambridge University Press, Cambridge, United Kingdom. pp. 437-458.

2) D.A. Webb, R.J. Gornall (1989) *Saxifrages of Europe*. Christopher Helm, London

3) S. Sommier (1898) Aggiunte alla florula di Capraia. *Nuovo Giorn Bot Ital* n.s. 5, 106–139

4) C. Favarger (1965) Notes de caryologie alpine, IV. *Bull. Soc. Neucheloise Sci. Nat.* 88, 15-23

5) S. Kumar, S. Kumari, R.C. Gupta, V.K. Sharma (2013) Additions to the cytology of *Saxifraga* (*Saxifragaceae*) from the Western Himalayas, India. *Botanica Serbica* 37(2), 147-154

